

# **30<sup>TH</sup> INFORMAL GROUP ON GASEOUS FUELLED VEHICLES (GFV) MEETING**

## **PROCESS OF THE GFV HDDF RETROFIT ACTIVITY**

André Rijnders  
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Geneva  
7 January 2014

## **HDDF ACTIVITY**

### **Status UNECE R.49 concerning Dual-Fuel**

- The adoption of ECE/TRANS/WP.29/2013/111 in WP.29 in November 2013 (amendments to rev.5 Regulation 49 (EURO V) with the introduction of Dual-Fuel).
- Rev.6 Regulation 49 (Euro VI) → Supplement 1 to the 06 series of amendments – Date of entry into force: 15 July 2013

### **Status of European Regulation 582/2011 (Euro VI) concerning Dual-Fuel.**

- 3<sup>rd</sup> round Comitology adopted in July 2013. Publication expected soon (January/February 2014).

## **HDDF RETROFIT ACTIVITY**

### **Status of Retrofit Regulation concerning Dual-Fuel.**

- **66th GRPE June 2013 Geneva.**
  - endorsed the GFV to develop a new UN Regulation for heavy-duty dual-fuel retrofit.
  
- **28<sup>th</sup> GFV on 12 September 2013 in Brussels**
  - progress will rely on a first draft of a structure, considering some of the basic principles already discussed (and for future discussion),
  - ACEA/OICA suggesting to come with an appropriate text. (that also might take advantage of some of the AEGPL work that already has been done)
  - At the next meeting of the HDDF TF we will start the writing of the new document, possibly considering useful elements of what already has been produced.
  
- **29<sup>th</sup> GFV on 3-4 December 2013 in The Hague, the Netherlands**
  - Structure and basic principles,
  - AEGPL document for a new regulation on Dual Fuel retrofit for Heavy Duty
  - ACEA/OICA suggestions about a framework for a new regulation.
  - Written remarks from AECC and CLEPA.
  - Roadmap
  - Organization issues of Task Force HDDF retrofit

## HDDF RETROFIT ACTIVITY

### Timing:

- January 68° GRPE 2014: reports and discussions
- June 69° GRPE 2014: informal document (if available)
- January 70° GRPE 2015: formal document (if available)
- June WP.29 2015: adoption

### Organisation:

- GFV mean group will discuss the HDDF activity of fundamentals & principles & process
- Task Force retrofit HDDF activity technical implementation and drafting activity
- Chair Task Force retrofit HDDF: TNO (Henk Dekker)
- Secretariat HDDF TF → NGV global (Jeff Seisler)
- Meeting HDDF TF → to be decided by the TF (or GFV)

## FUNDAMENTALS & PRINCIPLES OF HDDF-RETROFIT

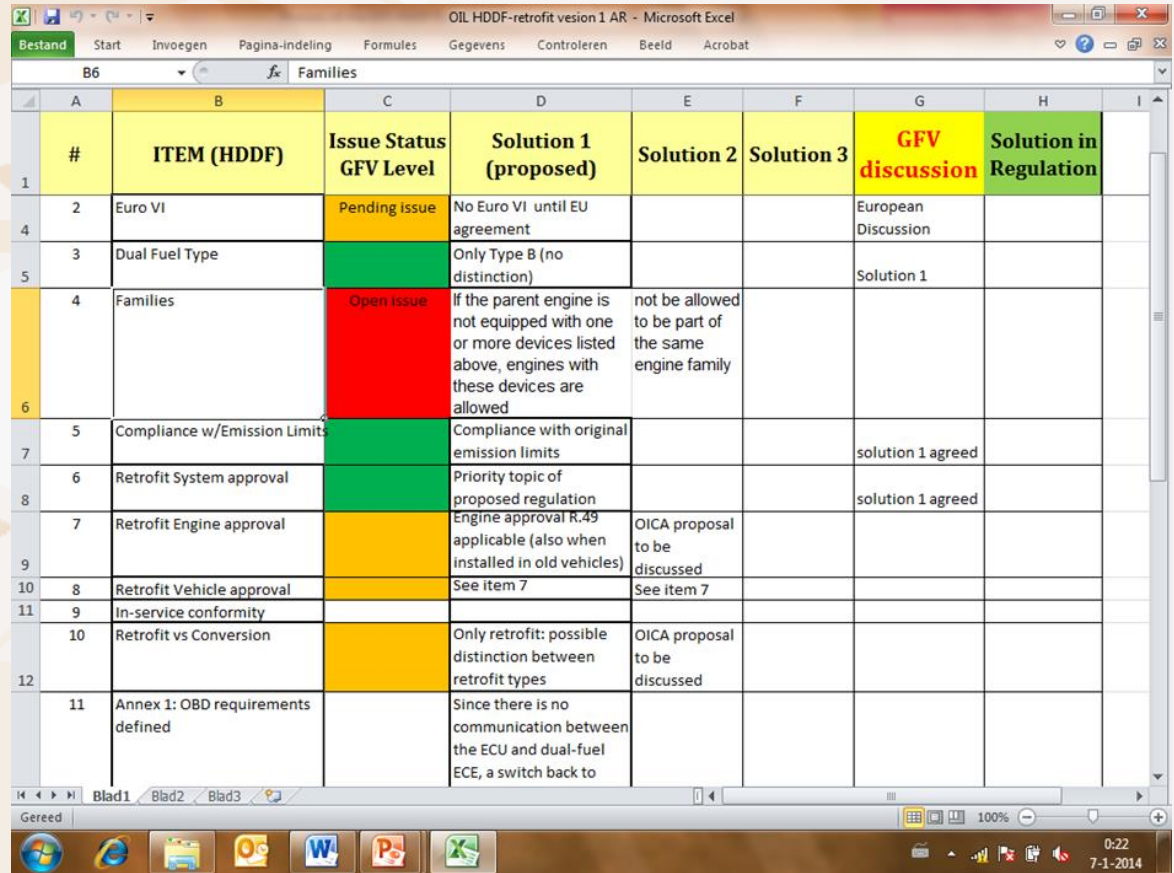
### Discussed/agreed issues

- **Scope**
  - First Euro IV / V  
Possibly later Euro VI, after MVEG discussion
  - Only type B  
No distinction between types 1, 2 and 3
- **Families**
  - Parent engine: emission test compliant with EL
  - Robust requirements (not more relaxed than the most stringent requirements of a CP today)
- **Approval**
  - Retrofit system (LPG/CNG/LNG systems for a vehicle and engine type)
  - Retrofit engine (*not needed because R49 exist for dual fuel engines*)

# FUNDAMENTALS & PRINCIPLES OF HDDF-RETROFIT

- **ISC**
  - Tbd
- **Others**

Excel sheet with  
“ Open Issue List”



#	ITEM (HDDF)	Issue Status GFV Level	Solution 1 (proposed)	Solution 2	Solution 3	GFV discussion	Solution in Regulation
2	Euro VI	Pending issue	No Euro VI until EU agreement			European Discussion	
3	Dual Fuel Type		Only Type B (no distinction)			Solution 1	
4	Families	Open issue	If the parent engine is not equipped with one or more devices listed above, engines with these devices are allowed	not be allowed to be part of the same engine family			
5	Compliance w/Emission Limits		Compliance with original emission limits			solution 1 agreed	
6	Retrofit System approval		Priority topic of proposed regulation			solution 1 agreed	
7	Retrofit Engine approval		Engine approval R.49 applicable (also when installed in old vehicles)	OICA proposal to be discussed			
8	Retrofit Vehicle approval		See item 7	See item 7			
9	In-service conformity						
10	Retrofit vs Conversion		Only retrofit: possible distinction between retrofit types	OICA proposal to be discussed			
11	Annex 1: OBD requirements defined		Since there is no communication between the ECU and dual-fuel ECE, a switch back to				

# FUNDAMENTALS & PRINCIPLES OF HDDF-RETROFIT

## Fundamental issues

### OICA (GFV 29-03)

- Retrofit vs Conversion
  - 1)Retrofit: fitting new elements of design to an approved engine system without substantially modifying its emission strategies (e.g. fitting a particulate filter).
  - 2)Conversion: fitting new elements of design to an approved engine system and/or substantially changing its emission or operating strategies (e.g. in view of letting it run with a different fuel)

# FUNDAMENTALS & PRINCIPLES OF HDDF-RETROFIT

## Fundamental issues

- **Discussion in GFV 29<sup>th</sup>**
  - not all the dual-fuel systems can be considered “conversions”, as defined by OICA.
  - conversions is a new working and definition and could be effect more kinds of modifications and Regulations, like R115, REC, chip tuning. (also written AECC comments)
  - The GFV participants agree to keep the historical wording “retrofit” system to avoid any confusion.
  - A sub-classification of retrofit systems of “substantially” modify emission and operating strategies like intrusive and non-intrusive systems.
  - Clarification needed for responsibilities after retrofit and for ISC (concerning the written CLEPA comments)



## **FUNDAMENTALS & PRINCIPLES OF HDDF-RETROFIT**

### **Fundamental issues**

#### **OICA proposes three sets of requirements:**

- 1) requirements for certifying a conversion system;
- 2) requirements for certifying a converted vehicle;
- 3) requirements for installing a certified engine on a converted vehicle

#### **GFV concluded after discussion:**

First start with highest priority and the “low hanging fruit” → approval of dual fuel retrofit systems.

# FUNDAMENTALS & PRINCIPLES OF HDDF-RETROFIT

## Fundamental issues

### AEGPL (GFV 29-02)

- **harmonized method for the classification, evaluation and approval of:**
  1. dual fuel retrofit **systems** to be fitted in heavy duty road vehicles;
  2. dual fuel retrofitted **engines** to be fitted in heavy duty road vehicles;
  3. **retrofitted vehicle** type with an approved dual fuel retrofitted engine.

### GFV 29<sup>th</sup> conclusion:

Concerns about loopholes with R49 when approving a HDDF retrofitted engine and HDDF retrofit vehicle with a retrofitted HDDF engine.

The most important part is HDDF retrofit systems,

→delete 2 and 3 and develop 1.

Next meetings will focus and complete the discussion on HDDF retrofit systems. The GFV agrees to take the AEGPL text as starting point for further development.

## **FUNDAMENTALS & PRINCIPLES OF HDDF-RETROFIT**

### **Next meeting of HDDF-retrofit:**

GFV has a meeting scheduled in Brussels on Wednesday, 29th January 2014 DG Enterprise (Brey 5A).

This will be a GFV meeting and a kick-off for the HDDF TF-Retrofit.